

What is Claimed is:

1. An illuminating device comprising a white light source, and an auxiliary light source emitting light having a wavelength component which is considered to be insufficient from the viewpoint of color reproduction in the white light source, wherein

the white light source and the auxiliary light source are arranged such that their respective optical axes cross each other, and

light mixing means for mixing light from said white light source and light from said auxiliary light source and emitting the mixed lights is provided at the position where the optical axes cross each other.

2. The illuminating device according to claim 1, wherein

said auxiliary light source has a plurality of solid-state light sources respectively emitting parallel lights arranged therein, and

an optical integrator for preventing the lights respectively emitted from the solid-state light sources from being introduced in a nonuniform state onto an object to be illuminated is provided on the light exit side of said light mixing means.

3. An illuminating device comprising a white light source, and an auxiliary light source emitting light

having a wavelength component which is considered to be insufficient from the viewpoint of color reproduction in the white light source, wherein

used as the auxiliary light source is one emitting only red light in a predetermined wavelength range,

the auxiliary light source is arranged around a light emission area of said white light source, and

there is provided an optical integrator for preventing the lights respectively emitted from the light sources from being introduced in a nonuniform state onto an object to be illuminated.

4. An illuminating device comprising a white light source, and an auxiliary light source emitting light having a wavelength component which is considered to be insufficient from the viewpoint of color reproduction in the white light source, wherein

said white light source has a square light emitter by restricting a round light emitter using a shading plate,

said auxiliary light source is arranged on said shading plate, and

there is provided an optical integrator for preventing the lights respectively emitted from the light sources from being introduced in a nonuniform state onto an object to be illuminated.

5. The illuminating device according to claim 2, wherein

a pair of fly's eye lenses is provided as said optical integrator, and

each of the solid-state light sources and each of lenses composing the pair of fly's eye lenses correspond to each other.

6. The illuminating device according to claim 3, said auxiliary light source has a plurality of solid-state light sources respectively emitting parallel lights arranged therein,

a pair of fly's eye lenses is provided as said optical integrator, and

each of the solid-state light sources and each of lenses composing the pair of fly's eye lenses correspond to each other.

7. The illuminating device according to claim 4, said auxiliary light source has a plurality of solid-state light sources respectively emitting parallel lights arranged therein,

a pair of fly's eye lenses is provided as said optical integrator, and

each of the solid-state light sources and each of lenses composing the pair of fly's eye lenses correspond to each other.

8. An illuminating device comprising a white light source comprising a concave reflecting element, and an auxiliary light source emitting light having a wavelength component which is considered to be insufficient from the viewpoint of color reproduction in the white light source, wherein

the light emitted from said auxiliary light source is condensed in the vicinity of a light emitting point of said white light source.

9. An illuminating device comprising a white light source, and an auxiliary light source emitting light having a wavelength component which is considered to be insufficient from the viewpoint of color reproduction in the white light source, wherein

light emitted from said white light source is condensed at a predetermined position, and the light emitted from the auxiliary light source is also condensed at said predetermined position, and

a light incidence surface of a rod prism which is an optical integrator is located at the predetermined position.

10. The illuminating device according to claim 8, wherein

said auxiliary light source has a plurality of solid-state light sources arranged therein, and

each of the solid-state light sources has a condenser element.

11. The illuminating device according to claim 9, wherein

said auxiliary light source has a plurality of solid-state light sources arranged therein, and

each of the solid-state light sources has a condenser element.

12. An illuminating device comprising:

a first light source and a second light source respectively emitting nearly parallel lights, and

an optical member having a first optical element for introducing the light emitted from said first light source in a particular direction and a second optical element for introducing the light emitted from the second light source in a direction parallel to said particular direction alternately arranged therein,

a white light source being provided as said first light source, and

an auxiliary light source emitting light having a wavelength component which is considered to be insufficient from the viewpoint of color reproduction in said white light source being provided as said second light source.

13. An illuminating device comprising:

a first light source emitting nearly parallel lights,

an optical member having a plurality of optical elements for respectively introducing the lights emitted from said first light source in particular directions formed therein with predetermined spacing, and

a second group of light sources arranged among said optical elements and respectively emitting nearly parallel lights in directions parallel to said particular directions,

a white light source being provided as said first light source, and

an auxiliary light source emitting light having a wavelength component which is considered to be insufficient from the viewpoint of color reproduction in said white light source being provided as said second group of light sources.

14. The illuminating device according to claim 12, wherein

said auxiliary light source has a plurality of solid-state light sources respectively emitting nearly parallel lights arranged therein.

15. The illuminating device according to claim 13, wherein

said auxiliary light source has a plurality of

solid-state light sources respectively emitting nearly parallel lights arranged therein.

16. In the illuminating device according to any one of claims 2, 5, 6, 7, 10, 11, 14, and 15, an illuminating device wherein

there are provided as said solid-state light sources solid-state light sources respectively emitting lights having different wavelengths, and

there is provided means for driving each of the solid-state light sources to selectively emit the light.

17. In a projection type video display apparatus that modulates light emitted from an illuminating device using a light valve and projects the modulated light,

a projection type video display apparatus comprising as said illuminating device the illuminating device according to any one of claims 1 to 15.

18. In a projection type video display apparatus that modulates light emitted from an illuminating device using a light valve and projects the modulated light,

a projection type video display apparatus comprising as said illuminating device the illuminating device according to claim 16.